

Montana Department of Transportation



Working Paper #2: Assessment of Existing and Future Opportunities

FINAL

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DISCLAIMER

Some of the claims and conclusions presented in this report are based on interviews conducted by the research team between May and July 2006. Whenever possible, data and technical analysis are provided in the report to substantiate these claims. When no data or analysis is provided, please remember that further analysis is necessary to determine whether the claim is supported by the facts.

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1: INTRODUCTION

In August 2005, Congress designated the portions of MT 16 from the Port of Raymond to Culbertson and US 2 from Culbertson to the North Dakota border as segments of the Theodore Roosevelt Expressway (TRE) “High Priority Corridor.” The TRE is one of 80 corridors in the United States that have received similar designations. The TRE makes up the northernmost segment of a 2,236 mile corridor that, together with the Heartland Expressway and the Port to Plains Trade Corridor, compose the “Great Plains International Trade Corridor” (see Figure 1). This corridor spans nine central US states, beginning in the south at the Port of Laredo in Texas and ending in the north at the Port of Raymond in Montana. This study’s focus is the Montana segment of the TRE corridor.

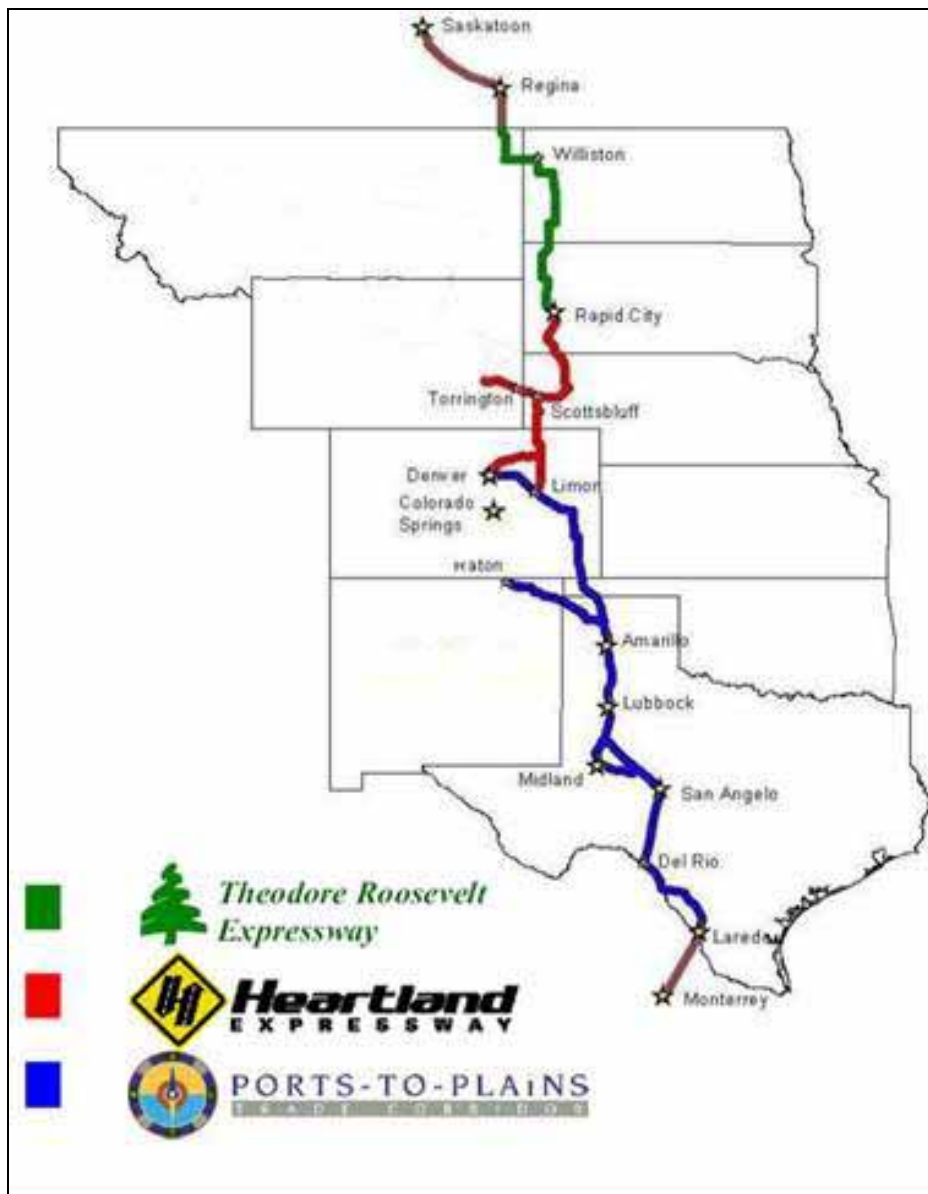
This Working Paper is a part of the US 2/MT 16 Theodore Roosevelt Expressway Development Study. The purpose of the study is to identify the economic, regulatory, or operational changes that would result in traffic and safety conditions justifying the expansion of the Theodore Roosevelt Expressway section in Montana to a 4-lane facility.

This Working Paper includes an overview of existing opportunities for growth (economic or purely traffic related) in the region along with impediments that could challenge that potential growth. The paper also presents an assessment of the existing traffic conditions and their impact on the local economy. Furthermore, potential economic developments within the area, arising from highway expansion, are also assessed in this Working Paper.

The research utilizes a combination of national, regional and local data on opportunities in key industries within the study area, namely agriculture, energy, tourism, transportation, and retail trade. Telephone interviews were conducted to gain an understanding of existing economic conditions and opportunities for structural changes in the regional and local economy. The interview process is discussed in section 1.1.

Section 2 of this paper focuses on agriculture opportunities within the study area. Sections 3, 4, and 5 discuss energy, tourism, and transportation opportunities, respectively. Section 6 describes retail trade and other opportunities in the study area.

Figure 1: Great Plains International Trade Corridor



Source: http://www.portstoplains.com/graphics/GPITC_MAP_12_05.pdf

1.1 Interview Process

To gain an understanding of existing conditions in the region, interviews were carried out with local and regional developers and planners, representatives from the grain, energy, and tourism industries, business owners, freight forwarders and carriers, and elected officials. A total of 120 surveys were conducted to assess how stakeholders view the role that transportation plays and will continue to play in their industries, as well as to inform an assessment of any induced development that could arise from general opportunities or highway improvement. There was an effort to reach out to different parts of the community to gain a firm understanding of opportunities within the area. The sample of participants was comprised mainly of stakeholders from companies and agencies located in Montana, North Dakota, and Saskatchewan. Table 1 on the following page presents some of the institutions that participated in the interview process.

Questions were asked pertaining to the existing structure and operational organization of the region's economy and related to the likelihood of future structural economic changes. More specifically, the questionnaire included questions on:

- Current operations;
- Current and future (planned) utilization of the MT 16/US 2 corridor (route preferences);
- Current impediments to business expansion or re-organization (including production and transportation capacity constraints, and institutional or regulatory impediments);
- Potential expansion or restructuring plans under the current MT 16/US 2 configuration; and
- Potential changes in the outlook for industry expansion or restructuring under a four-lane MT 16/US 2 configuration.

Table 1: Data Collection – Sample Institutions**AGRICULTURE:**

- Eastern Agricultural Resource Center, Montana Agriculture Experiment Station
- The Sidney Area Chamber of Commerce and Agriculture
- Montana Department of Agriculture, Agricultural Development Division
- Country Foods, Inc.
- College of Agriculture and Montana Agriculture Experiment Station
- Montana Wheat and Barley Committee
- Montana Department of Agriculture
- USDA's National Agricultural Statistics Service Montana Field Office
- Northwestern Agricultural Research Center, Montana State University
- Superior Grains Inc.
- Montana Grain Growers Association
- Montana Conservation Districts
- Mosaic Canada
- Sheridan County Commissioners
- Columbia Grain
- Busch Agriculture Resources Inc.
- Sitting Bull Auction

TOURISM:

- Missouri River Country
- Fort Peck Paleontology, Inc. and Dinosaur Field Station
- Fort Buford State Historic Site
- Montana Fish, Wildlife and Parks, Region 6
- Montana Promotion Division, Montana Department of Commerce
- McKenzie County Tourism Bureau
- Sherwood Inn
- U.S. Army Corps of Engineers, Fort Peck Lake Office
- Culbertson Visitors Center
- Fort Union Trading Post National Historic Site
- Judith River Dinosaur Institute
- Paleo World Research Foundation
- Fort Peck Interpretive Center and Museum

OTHERS:

- Great Northern Development Corp.
- Dry Prairie Rural Water
- Montana Manufacturing Extension Center
- Montana World Trade Center
- Bear Paw Development
- S. Central Saskatchewan Transportation Planning Committee
- Regina Regional Economic Development Authority (RREDA)
- Sidney Millwork Company
- Montana Department of Commerce

ENERGY:

- Montana Association of Oil, Gas and Coal Counties
- Ethanol Producers and Consumers (EPAC)
- Encore Acquisition Company
- New Harvest Energy, LLC
- Cypress Agri-Energy Inc.
- Sheridan Electric Cooperative
- Montana Electric Cooperatives Association (MECA)
- Continental Resources Inc
- Eastern Plains RC&D
- Two Rivers Economic Growth, Inc.
- Greenslade Consulting Group
- Lower Yellowstone Electric REA
- Economic Development Alliance of South East Alberta
- O'Toole Law Firm
- Northern Services Inc.
- Fort Peck Assiniboine and Sioux Tribes

TRANSPORTATION/TRUCKING:

- BNSF Economic Development
- Livingston International, Inc.
- Yankee Group of Companies
- Canadian Freightways
- Ports-to-Plains Trade Corridor
- Prudhomme Trucks Ltd.
- Steve Nelson Trucking Inc.
- Panhandle Area Development
- Texas Motor Transportation Association
- Midwest Motor Express, Inc
- North Dakota Trade Office
- Diamond B Oilfield Trucking
- North Dakota Department of Transportation, Planning and Programming
- Yellowstone Valley Rail Road
- Bob's Pickup & Delivery, Inc.

OTHERS (Continued):

- Richland Economic Development Corporation
- Williston Convention and Visitors Bureau
- Glasgow Chamber of Commerce
- Valley County
- Culbertson Town
- The University of Montana, Bureau of Business and Economic Research
- Province of Saskatchewan Regional and Economic Co-operative Development
- Cover-All Building Systems Montana
- Dawson County Economic Development Council

1.2 Definition of the Study Area

The analysis of existing opportunities is conducted at three levels:¹

- Locally, the study area is comprised of the Montana portion of the Theodore Roosevelt Expressway including MT 16 from the Port of Raymond in the north, south to Culbertson and US 2 east from Culbertson to the North Dakota state line.
- At a regional level the analysis broadens to include areas outside the immediate corridor area, including central and western Montana but also the Province of Saskatchewan and the States of North Dakota and South Dakota. The wider scope taken at this level is driven by the importance the MT 16/US 2 corridor provides to regional connectivity and mobility. Within this broader region the analysis notes the impacts that major metropolitan areas such as: Great Falls and Billings in Montana, Rapid City in South Dakota, and Saskatoon and Regina in Saskatchewan can have on the economy and traffic of the corridor area.
- On a national scale, the study area encompasses the entire northwestern region of the United States and the southwest portion of Canada bordering Montana and North Dakota as well as the central plains states including the entire Great Plains International Trade Corridor. In particular, travel and freight opportunities from Texas to Saskatchewan, Canada and from the West Coast to Minneapolis, Minnesota and the agriculture and industrial agglomerations beyond it need to be taken into account.

¹ See Working Paper 1 “Assessment of Existing Conditions” for more details and maps.

2: AGRICULTURE OPPORTUNITIES

The agriculture sector² plays a large role in the study area, accounting for about one fifth of total employment in 2000; agriculture is significantly more concentrated in this area than in the state as a whole.³ Montana's most heavily produced agricultural crops include wheat, barley, oats, and sugar beets, and the study area accounts for a large amount of the state's total production of these crops. There are also several specialty crops in the study area which have seen a large increase in production over the past 5 years, including flaxseed, lentils, and peas.

2.1 Existing Opportunities

Eastern Montana has considerable potential for growth in the agriculture sector. The region's large acreage and sparse population allows for large amounts of land to be devoted to agricultural pursuits. Moreover, the relative size of the agricultural sector within the study area makes growth in the agriculture industry a primary potential for economic growth in the region.

2.1.1 Agriculture

There are various agricultural opportunities in the study area, at all three levels of analysis (local, regional, and national). Increases in crop production are expected, and irrigation projects to increase the acreage of plantable crop land have been proposed.

2.1.1.1 Local Level

In the state and in the study area, the number of farms and the land they cover has been steadily increasing. Recent trends in the study area show increases in harvested crops of wheat, oats, and sugar beets, in the production of specialty crops, in organic products produced, and in the cattle sector.⁴ Furthermore, from interviews with agricultural contacts, it was learned that approximately 25 percent of the total farm acreage within the region is in the Conservation Reserve Program (CRP). Acreage designated by the Federal Government as being within the CRP cannot be farmed; instead producers are paid a stipend not to plant crops on those acres in an effort to diminish agricultural output and thus push up market prices. This means that if significant opportunities arose to generate more income from farming than from the government payments not to farm, then a large potential amount of land could go into production.

² Employment for agriculture is reported together with forestry, fishing and hunting, and mining within the census data; however, there is little to no forestry or mining within the study area.

³ See Working Paper 1 "Assessment of Existing Conditions" for more details and supporting data.

⁴ National Agricultural Statistics Service, United States Department of Agriculture; retrieved from <http://www.nass.usda.gov/>

Another area for potential growth has been in the production of pulse crops⁵ in the study area. Respondents reported that since pulse crops hold moisture within the soil and add nitrogen back into the soil, production of these crops has been an attractive option to a fallow field. Because pulse crops can be planted in lieu of a fallow field within a normal crop rotation, they turn over land that had no crop planted on it before to the growing of peas and lentils. This gives a farmer a marketable crop where before they had none, and the crop planted after a pulse crop requires less nitrogen fertilizer, saving the producer money on crop inputs.

There is also potential for the development of processing facilities. For example, there are enough onion growers in the study area to make the development of a vegetable processing plant possible. In addition, economic development informants believe that if one more dairy operation is put in place in Sidney, there will be enough critical mass to develop a milk reduction facility. However, they report that without some assurance that value-added processing will be available, producers will be skeptical to change production; developing a processing facility requires a commitment for the acres of cropland it will serve.

2.1.1.2 Regional Level

Development of irrigation projects has been of interest in eastern Montana. Adding irrigated land can increase the acreage that can be planted as well as the value per acre planted as compared to dry acreage. One specific irrigation project that would provide for great economic opportunities in the region is on the Fort Peck reservation.



Conversations with representatives within the Fort Peck tribe suggest that the tribes could increase irrigation of their crop land. The tribe reports it was granted water rights to divert up to approximately 1,000,000 acre feet of water per year from the Missouri river. If this amount of water was actually diverted it would create the possibility of irrigating up to 450,000 acres of cropland. One limitation to the magnitude of this irrigation project is the number of acres of tribal-owned land suitable for crop production. With water values at \$200 per acre foot, the tribe could potentially earn \$200,000,000 per year, if they were able to fully utilize such water rights.

2.1.1.3 National Level

With health concerns growing in America, there has been increasing consumer interest in organic products and healthier oils. Due to these increasing health concerns, continued growth in this sector is expected nationally. The study area is home to much of the organic crop production in Montana. As far as healthy oils are concerned, research has shown that

⁵ Pulse crops within the study area comprise mostly peas and lentils and other legumes; these crops have an ability to add nitrogen back into the soil instead of consuming it like most other crops.

Montola safflowers produce oil that is high in oleic acid and low in saturated fat⁶; correspondingly, safflower oil has been shown to be one of the healthiest oils currently available, healthier even than olive oil. Thus, there will likely be desire to increase the production of safflower oil, increasing the demand from agriculture for safflower seeds.

Montola Growers Inc., which has a seed crushing facility in Culbertson, reports exclusive rights to the Montola 2000 and 2001 seed varieties. These seed varieties (developed at Montana State University's Agricultural Research Center) are the varieties used to produce safflower oil. With organic products and safflower oil production concentrated in the study area, there is potential for growth in the agriculture sector to find a market at the national level.

2.1.2 Agriculture Based Energy

Agriculture and energy are highly interdependent, with some energy developments relying on growth in specific crops. For example, biodiesel, a relatively clean-burning diesel fuel, is made from renewable vegetable oil, such as soybean oil and safflower oil. The nation's safflower production is mainly concentrated in California, Montana, and North Dakota. Biodiesel production, in turn, generates outputs that can be used for livestock feed, suggesting greater local fattening and finishing within the area.

2.1.2.1 Local Level

With the safflower being a specialty crop in Montana, specifically in the study area, and with the recent interest in natural energy sources, there will most likely be increased demand for production of this crop. This trend presents an economic opportunity for growth in the study area.

The growing interest in biodiesel production has also spurred talks of growing camelina seed in the Fort Peck area. The Fort Peck area has long produced canola for cooking oil, but the camelina seed is a better producer of oil for the development of biodiesel. However, there are some difficulties in growing camelina, and the area is not equipped to mass produce this seed crop (the ground needs to be specially prepared, the harvesting of the crop is different than the harvesting of canola, and special equipment is needed to efficiently handle this crop). Thus, before mass production of camelina would be viable, substantial commitment to biodiesel development would be necessary.

⁶ See http://www.montola.com/why_oil.html

Ethanol is another potential natural resource for development in Montana. In the United States, ethanol is derived mainly from corn grain; however, ethanol can be derived from most agricultural crops. With the concentrated agricultural production within the study area, ethanol development is possible.

An additional advantage of using ethanol as an energy source is that animal feed grain is a byproduct of the alcohol extraction process.



This feed grain could be used to provide another source of local livestock food supply, which could create an incentive to lengthen livestock feeding.

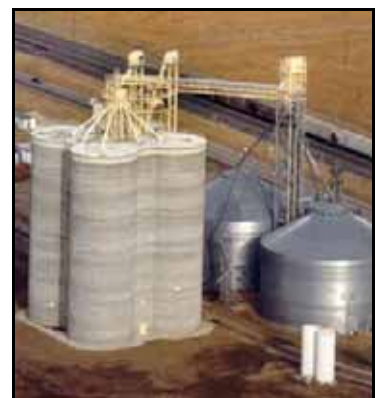
2.1.2.2 Regional Level

On a regional level, building biodiesel plants in Montana would provide opportunities for trade with Canada. Developing biodiesel facilities requires an adequate amount of seed to crush. This seed, specifically canola, could be imported from Canada.

2.2 Impediments to Growth

Because the agriculture industry is highly dependent on transportation, respondents noted that the full extent of agriculture opportunities may not be realized without road improvements. The transportation system is a necessary means through which commodities such as grains and livestock are distributed from the production points within Montana to final markets outside of the state.

Individuals surveyed in the area reported that transportation infrastructure is a major impediment to growth in the agriculture sector. (About two-thirds of those surveyed felt that access or quality was an impediment to growth in agriculture.) In general, farmers are required to truck products from fields to rail loading facilities in order to get their output to final market. With the trend towards consolidating loading facilities and the movement towards using 110-car shuttle facilities, adequate road infrastructure would help mitigate transport risks associated with moving products to market. This would occur because better roadways would allow some farmers to transport to more distant, lower-rate loading facilities instead of the most local one.



Improved highway infrastructure is, by this view, critical for the development of local value-added agriculture industries since final products must be shipped out of the region to final consumer markets.

Other obstacles to growth in the agriculture industry are high rail rates and the trend towards increasing consolidation of rail-loading facilities. About half of respondents in this area believe that high rail rates or lack of access to rail are among the main impediments to growth. Adequate roadway infrastructure would mitigate these problems by increasing the speed and safety of long distance trucking to more distant loading facilities.



The increase in larger 110-car loading facilities and their corresponding lower shipping rates per carload have led to the closing of smaller capacity loading facilities, and this trend appears to be continuing. The consolidation of rail-loading facilities will make it more expensive for farmers to truck their products to the closest facility. Continued evidence of this trend is seen in the Columbia Barge Company's reported purchase of land in Culbertson, potentially for another 110 car loading facility.

Finally, the lack of adequate water supply in Montana, and specifically in northeastern Montana, poses a potential obstacle. An ample supply of water is necessary for the proposed irrigation projects.

2.3 Opportunities Arising from Road Expansion

Roadway improvements would lower transportation costs, increase farmers' potential profitability in their crops, and encourage value-added agriculture. Improved transportation could allow for increased crop production, as the subsequent reduced transport costs would allow more farm acreage⁷ to go into production profitably.

Finally, road expansion would provide increased ease of transport for agricultural contract trucking firms and improve the timeliness of deliveries. Improvement of roadways along the corridor would facilitate the on-time delivery of needed supplies, such as replacement machinery parts for producers, thus generating a potential cost savings.

2.4 Summary of Findings

This section provides a summary of the major opportunities within the agriculture sector in the region, factors impeding growth, and potential agriculture opportunities that may benefit from roadway improvements in the study corridor.

⁷ As profitability in agriculture rises, eventually it could be more profitable to farm the land directly than accept the government payments to keep land on the CRP, thus overall planted acreage could increase. Profitability increases also create the incentive to shift land into agricultural production that currently is not considered agricultural land.

Summary of Opportunities Identified in the Agriculture Sector:

- Pulse crops can be planted in fallow crop rotation, thus increasing bushels produced and demand for agricultural trucking. The planting of pulse crops has the added benefit of adding nitrogen to the soil.
- Potential to build several processing facilities (i.e. vegetable processing plants) and a milk reduction facility.
- Development of irrigation projects.
- Increase in the production of organic crops and safflower oil as a result of consumer preferences shifting towards healthier oils.
- Increase in the production of safflower seed to fuel bio-diesel plants.
- Possibility of growing camelina seed in the Fort Peck area for use in maintaining bio-diesel plants.
- Growth in imports from Canada (specifically canola) to have adequate seed to crush for maintenance of bio-diesel plants.
- Increase in cattle numbers as a result of increased feed grain from ethanol byproduct.

Summary of Impediments to Growth in the Agriculture Sector (percentage of all respondents citing factor as an impediment):

- Transportation infrastructure access or quality 68%
- High rail rates or lack of access to rail 52%
- High fuel or other input prices 44%

Summary of Impacts of Infrastructure Improvements in the Corridor:

- Increased ease of transport for agricultural contract trucking firms and overall lower vehicle operating costs, leading to lower costs and increased profits for producers.
- Better highway infrastructure would support the development of local value-added agriculture industries because inputs to such industries come in by truck from rural farms, and the final products must be trucked to distribution or processing centers enroute to final consumer markets.
- An improved road corridor would help with the on-time delivery of needed supplies, such as replacement machinery parts, for producers.

3: ENERGY OPPORTUNITIES

Montana has vast opportunities for energy development. The state is rich in natural resources and has renewable energy potential. Specifically, Montana has considerable oil production capabilities. It also has a large potential supply of clean energy from sources such as biodiesel, ethanol, and wind power.

3.1 Existing Opportunities

With the recent renewed interest in developing Montana's natural resources and with the price of crude oil rising, opportunities for growth in the energy sector within the study area are arising, respondents report. Several energy-related projects in the study area using Montana's natural resources have already been proposed. Oil exploration activities have also been of particular interest recently.

3.1.1 Local Level

Northeastern Montana is the largest oil exploration area in Montana. A substantial share of oil production is concentrated in the study area, primarily in Richland, Roosevelt, and Sheridan Counties. Between 2000 and 2005, oil production expanded rapidly in northeastern Montana, particularly in the study area. In fact, production in Richland County increased almost four hundred percent between 2000 and 2004. With crude oil prices rising, exploration activities have greatly increased.⁸



Representatives from the oil and gas industry explain that CO₂ can be used in oil extraction activities to make the process more efficient. Typically, water is used in order to extract the oil, but this leaves about 70% of the oil still in the ground. Using CO₂ after this initial extraction phase can greatly increase yields, reducing the amount of oil that is left in the ground to 30-40%. While using CO₂ to extract oil within the study area would be valuable, it is not likely that this CO₂ would be trucked to the area because of the corrosive nature of CO₂ in liquefied form. Instead, it would most likely be necessary to pipeline it short distances.⁹

In addition to oil, Montana has vast reserves of other valuable energy resources. Montana has the largest coal reserves in the United States and the 5th largest wind resources. As of 2003, the state was the 6th largest producer of coal, the 8th and 10th largest driller of oil and natural gas wells, respectively, and the 13th largest installer of wind energy capacity.

⁸ See <http://www.gasandoil.com/goc/news/ntn53526.htm>

⁹ Experts within the oil and gas industry have stated that a pipeline will only be feasible to transport CO₂ from coal conversion plants or coal electricity generating plants within a 100 mile radius of the oil field destination because of the harshness of the liquid form of CO₂ on the metal in the pipeline.

Overall, 94 percent of the state oil production, 36 percent of the state natural gas production, and 67 percent of the state oil and gas production tax occurs in eastern Montana. Fifty-four percent of the State oil production, 10 percent of the State natural gas production, and 25 percent of the State oil and gas production tax (totaling \$16.5 million) is concentrated in Richland County.

Technology is currently available to turn coal into clean-burning diesel and aviation fuel through the Fischer-Tropsch process.¹⁰ This technology has not been widely adopted largely because producing synthetic fuels from coal and natural gas is not profitable when oil prices are below \$30 a barrel; however, with current oil prices over \$60 a barrel, there has been renewed interest in the technology. Furthermore, since many of the impurities are removed during the process, fuels produced using the Fischer-Tropsch process are cleaner than petroleum-based fuels. The possibility of building Fischer-Tropsch plants would generate substantial economic opportunities in the region.¹¹ However, there has been skepticism regarding whether enough water is available in eastern Montana to run a substantial number of these plants.¹²

Because of the recent renewed interest in developing Montana's natural resources, four energy related projects have been proposed within the study area: the Valley County Wind Energy Project, the Nelson Creek Project (a coal project near Circle), the Montola/Sustainable System Project (a bio-diesel refinery in Roosevelt County), and the Yellowstone Ethanol LLC Power Plant.¹³

- The Valley County Wind Energy Project (a.k.a. Wind Hunter Project) could generate up to 500 MW of wind energy using 334 wind turbines with a 30-mile 230 kV transmission line. The construction would take place in three phases, beginning in 2008 and ending in 2016. The economic benefits to the region begin with construction (approximately 618 full-time equivalent (FTE) positions will be required); an estimated 89 FTE permanent jobs will also be created involving the operation and maintenance of the Valley County Wind Energy Project.



¹⁰ This technology was developed in war-time Germany because it had reserves of coal but lacked petroleum. Sasol, a South African company, has been producing synthetic fuel from coal since 1995.

¹¹ See *Coal Rush*, Missoula Independent, Vol. 17, No. 15, April 2006, <http://www.missoulanews.com/News/News.asp?no=5158>

¹² See *Coal Made the Headlines, but the Real Story of the Energy Summit was the Cost-Effectiveness of Renewable Energy*, Billing Outpost, October 2005, <http://www.aeromt.org/wilbur%202.php>

¹³ See The Montana Symposium: Energy Future of the West, Montana's Energy Symposium, October 2005; retrieved from: <http://www.energyfuture.mt.gov>; <http://sidneyherald.com/articles/2006/07/09/news/news03.txt>

- The Nelson Creek Project is a proposed lignite-fired power plant that would be built near Circle, Montana. This clean coal mine-mouth power plant could provide 500 MW of electrical power. The construction would bring many temporary employment opportunities to the area; as many as 1,200 people would be needed during the construction period. Furthermore, 150 permanent FTE positions would be needed to operate the project after construction is complete and these jobs will be of high quality, having an average wage of \$60,000 per year.
- The Montola/Sustainable Systems Project involves building a biodiesel refinery near Culbertson in Roosevelt County, Montana. If developed, estimates suggest the facility would produce 15-20 million gallons of seed-oil per year. This plant would enhance the economy by providing permanent work to 31 FTE positions with an expected average wage of \$14 per hour. This facility would also likely require imports from Canada in order to have adequate seed to crush, which would potentially increase truck traffic in the study area.
- The Yellowstone Ethanol LLC Power Plant is a 50-million-gallon-per-year ethanol plant (with the potential to produce up to 100 million gallons per year in future) to be built in North Dakota between Williston and Fairview. It is projected that the plant would cost \$120 million and would generate 400 construction jobs resulting in \$6 million in construction wages during the building phase and 40 permanent jobs with an annual payroll in excess of \$1.5 million. Furthermore, 18-20 million bushels of corn and up to 2 million bushels of barley or wheat would be needed per year to sustain the plant. The pulp byproduct from the plant would feed 250,000 feeder cattle.

Some other potential energy projects suggested by respondents in the study area include an ethanol production plant in Oswego (Valley County), an oil refinery outside of Culbertson, and re-establishing an old oil refinery at the intersection of US 2 and MT 13, just west of Wolf Point. Furthermore, there are reported plans to build three or four additional ethanol plants in the state in the next few years.

3.1.2 Regional Level

With the increase in oil production and exploration in Montana, there are many opportunities for trade on a regional level.

It is likely that there will be increased truck traffic as oil exploration and extraction activities continue. Due to limited pipeline infrastructure for the transportation of oil, trucking has been the only option for many producers exporting oil to Canada. Also, the increased demand for oil exploration has the potential to bring jobs to the region.

3.1.3 National Level

With the proposed energy developments and increased oil exploration, there are many opportunities for exporting energy on a national level. For example, recently Montana has

been exporting a large share of its oil production to Wyoming for refining. A wind plant in Valley County would bring further opportunities to export energy by selling wind-generated electricity on the national electric grid.

Alberta, Canada has also recently seen substantial economic growth as a result of oil & gas and oil sands projects. In fact, such projects account for the majority of economic growth in the Alberta region. Even though this activity is taking place far from the Montana section of the TRE, it still could have traffic effects along the corridor because of the potential for large future growth within the Alberta energy sector.

3.2 Impediments to Growth

An obstacle to Montana oil sellers is the limited infrastructure for transporting oil to refineries. Of those respondents surveyed, more than two-thirds feel that transportation infrastructure capacity or quality is an impediment to growth in the energy sector. Currently, the existing pipelines are to capacity with Canadian crude, since Canadian suppliers had purchased rights to a large amount of the pipeline capacity. Subsequently, as a result of the limited pipeline capacity, Montana producers have trucked their oil to refineries instead, and offering their oil at discounted prices to make it attractive to refineries that might otherwise use the more convenient Canadian crude. (Since Canadian producers have purchased pipeline capacity rights to US pipelines, they are able to sell at a substantially higher price than Montana oil producers.)¹⁴

Recently, there have been discussions of the need for better oil infrastructure. Montana is among the top ten oil-producing states and has had the largest increase in oil production of any state in the US, primarily as a result of extensive exploration efforts. Additionally, the discovery of oil in the Williston Basin has allowed for significant increases in oil production and given Montana and North Dakota great potential for oil production in the future.¹⁵

Economists, including Paul Polzin of the University of Montana's Bureau of Business and Economic Research, expect that high oil prices will continue for some time, so the strength of oil as an economic potential is seen as a major growth sector for the study area. Oil exploration and extraction activities will likely increase truck traffic. This will be especially prominent in the study area, as much of this activity has been in Richland County. However, for this exploration to reach its full potential as a localized industry, there is a need for increased labor and housing. Of those surveyed, over a third of respondents felt that lack of labor supply was an impediment to growth in the energy sector.

¹⁴ See *Governors to Discuss Need for Better Oil Infrastructure*, The Associated Press, April 2006, <http://www.helenair.com/articles/2006/04/18/montana/08mt20060418001.txt>

¹⁵ See *Some Interesting Oil Industry Statistics*, Gibson Consulting Online, <http://www.gravmag.com/oil.html>

Developing an oil refinery in the study area could have a beneficial effect on the local economy by allowing for a shorter haul to a refining facility and saving a significant value of crude product. The development of oil in Montana, as well as in Saskatchewan and Alberta, could give this region new centrality as an impetus to added refining capacity. However, this opportunity may be fleeting, as “first movers” are likely to restore equilibrium in the spatial scheme of refining and distribution.



Finally, as discussed previously, the lack of water supply in eastern Montana is likely to be a factor affecting the feasibility of some of the proposed energy projects. Facilities such as those that convert coal to fuel require substantial supplies of water. Water has been one of the major issues thwarting coal development in the region.¹⁶

3.3 Opportunities Arising from Road Expansion

Roadway improvements would give rise to various opportunities in the energy sector. Maintaining some of the proposed energy plants could require imports from Canada; an enhanced corridor would make the transport of inputs from Canada even more appealing. Roadway improvements would increase the possibility of north-south truck transport.

The oil and gas sector is highly reliant on transportation in the movement of inputs, labor, and outputs. With the lack of adequate pipeline capacity to ship oil and gas in the region, trucking is a necessary means of transporting oil to refineries; at least until more efficient pipeline capacity is added. Without improvements to roadway infrastructure, growth in the oil and gas sector will not reach its full potential in the near term.

Road expansion would likely enhance oil exploration activity in the study area. Improvements to the roadway would increase the availability of labor in the area by making it easier for workers to commute to work across longer distances. Because of the noted shortage of energy sector labor, workers from surrounding major cities could be required to fulfill the demand for oil exploration activities in the area. Lacking sufficient local agglomeration in the industry, however, much of the needed labor may come from regional and national markets.

Finally, an enhanced corridor could lead to higher population in the area, due to the induced economic development, increasing regional demand for electricity and prompting various other energy projects.

¹⁶ See *Coal Made the Headlines, but the Real Story of the Energy Summit was the Cost-Effectiveness of Renewable Energy*, Billing Outpost, October 2005, <http://www.aeromt.org/wilbur%202.php>

3.4 Summary of Findings

This section provides a summary of the major opportunities within the energy sector in the region. In addition, the main impediments to growth and energy opportunities arising from roadway improvements in the study corridor are discussed.

Summary of Opportunities Identified in the Energy Sector:

- Increased oil exploration opportunities.
- Talks of building an oil refinery outside of Culbertson and the possibility of re-establishing an old oil refinery near Wolf Point.
- The economic feasibility of building Fischer-Tropsch plants to process coal into liquid fuel.
- Several energy related projects have already been proposed in the study area, such as the Valley County Wind Energy Project, the Nelson Creek Project, Montola/Sustainable Systems Project, and the Yellowstone Ethanol LLC Power Plant.
- Potential to build several other ethanol production plants and biodiesel refineries.

Summary of Impediments to Growth in the Energy Sector (percentage of all respondents citing factor as an impediment):

- Transportation infrastructure capacity or quality¹⁷ 67%
- Lack of labor supply 43%
- Lack of housing 19%

Summary of Impacts of Infrastructure Improvements in the Corridor:

- An enhanced corridor, as part of the Great Plains International Trade Corridor, can provide improved access to Denver and Midwestern and Southwestern markets.
- Improved transportation infrastructure is needed to keep up with the growth of the energy sector in the region, thus growth in this sector could be held back if the corridor is not expanded.
- Combined with other factors, an enhanced corridor could lead to higher population in the area by making the area more attractive to businesses and increasing economic development in the area. This could, in turn, increase the regional demand for electrical energy.

¹⁷ In general, transportation infrastructure for the energy sector includes roadways, rail lines, and pipelines.

- The remoteness of the study area makes dependable highway capacity and quality critical to facilitate the attraction and utilization of an adequate labor supply.

4: TOURISM OPPORTUNITIES

Since the late 1980's, tourism's role in the Montana economy has been growing. Tourism can raise income and tax revenue for the state through visitor spending and increase employment opportunities. The tourism industry relies on an efficient and safe transportation network.

4.1 Existing Opportunities

Although the number of visitors to Fort Peck Lake is substantially less than that of the top two Montana tourist destinations, Glacier National Park and Yellowstone National Park, Fort Peck Lake is still one of the top five tourist destinations in Montana. Fort Peck Lake is such a popular attraction to the area because of the diverse array of activities offered, such as fishing, boating, dinosaur excavation, and wildlife viewing. There are also a variety of seasonal activities, such as the Ice Fishing Derby in February and the boat launches in the summer, which always attract large numbers. Not surprisingly, development of the tourism industry in the study area could be substantially beneficial to the local economy. If plans of developing attractions in the area come to fruition, this could increase annual visitation and overnight stays, resulting in more tourism dollars for the area's economy.

There are several other developments currently underway and other projects still in the planning stages to improve tourism in the study area. For example, work is still continuing to fully develop the museums and dig sites which make up the Dinosaur Trail. The Montana Cowboy Hall of Fame is currently under development and is designated to be built along US 2 in Wolf Point. Also, infrastructure improvements that might bring visitors to the study area include a convention center to attract business groups.



Additionally, more information kiosks at rest stops and more frequent rest areas in general may make tourists more comfortable traveling along the study corridor, thus increasing potential visitation to the area.

4.2 Impediments to Growth

Respondents report that highway safety is a factor that adversely affects tourism growth in the area, especially among families. Because of the remoteness of the area, it is necessary to travel on narrow, two-lane roads to visit tourist destinations, which can be unattractive to out-of-area visitors. The difficulty of passing other vehicles makes traveling along a two-lane corridor more hazardous than a four-lane highway, and Montana's different speed limits for

cars and trucks (see Table 2) poses a further safety hazard. These issues all enter potential tourists' minds when they decide where to visit.

Table 2: Speed Limits for Montana, in miles per hour

Type of Highway	Cars and Light Trucks		Heavy Trucks*	
	Daytime	Nighttime	Daytime	Nighttime
Interstate	75	75	65	65
Interstate Within Urban Area Billings, Great Falls and Missoula	65	65	65	65
Two-Lane	70	65	60	55
U.S. 93	65	65	60	55

Source: Montana Department of Transportation

* Over one ton manufacturer's rated capacity

Safety concerns also arise with high percentages of truck traffic. With the possible economic expansion in the agriculture industry, truck traffic in the study area will increase. Considering the wide and oversized loads commonly associated with the movement of agriculture equipment, safety issues are likely to be a concern among tourists. Thus, in order not to have a reduction in the current level of tourism in the region, roadway enhancements may become necessary along MT 16 and US 2.



Tourism contacts surveyed within the area stated that there is inadequate signage for tourists and a general lack of advertising in the region. The reasons cited for the lack of signage were regulations limiting sign placement (signs are only allowed to be placed along the primary roadway for a destination) and that signage placement and upkeep costs can be prohibitive, especially along remote sections of roadways. Some survey participants believed that erecting signs on some of the major routes tourists are likely to travel may lead to higher visitorship of tourist attractions located on less major roadways, and an increase in advertising may attract visitors from outside of the region to less well known tourist attractions.

It has been suggested by some stakeholders within the region that some travel organizations have been recommending routes that do not contain US 2 even when it would be the most direct route. This is believed to be due to specific trip-routing software algorithms that are intended to generate routes that are the shortest in travel time. Such software often routes long distance trips along interstates rather than US 2 route, because while US 2 may offer a shorter route, it also has lower levels of service and lower speed limits than the interstates.

The resulting reduction in drive-by traffic contributes to a lower visitorship for tourist destinations along US 2 .

Finally, the area's long distances from major population centers makes it unlikely that future highway expansions will affect travel behaviors in a significant way: travel time savings or safety improvements (from future expansions) will remain small relative to overall travel costs. Since no amount of highway improvements will change the area's remoteness, this factor is likely to remain an impediment to growth in the tourism sector.

4.3 Opportunities Arising from Road Expansion

Roadway improvements in the study area could potentially attract visitors to the region, because tourists tend to be reluctant to drive on narrow, two-lane roads that make passing more difficult. Expanding the roadway would also increase safety in the region. Highway expansion would mitigate the problems arising from the variation in speed between trucks and cars, as vehicles traveling at different speeds would be able to travel in separate lanes. Of those tourism contacts surveyed, almost half cited transportation infrastructure capacity or quality as one of the main impediments to growth in tourism. Thus there seems to be anecdotal evidence that enhancing the roadway would directly increase tourism within the region.

4.4 Summary of Findings

This section provides a summary of the major opportunities within the tourism sector, obstacles to growth in this industry, and general opportunities arising from roadway improvements in the study corridor.

Summary of Opportunities Identified in the Tourism Sector:

- Plans of developing a destination resort in the Fort Peck area.
- Continued enhancements to the Dinosaur Trail.
- Increased signage and advertising.
- Plans to develop Montana's Cowboy Hall of Fame.

Summary of Impediments to Growth in the Tourism Sector (percentage of all respondents citing factor as an impediment):

- | | |
|---|-----|
| ▪ High fuel prices | 63% |
| ▪ Transportation infrastructure capacity or quality | 46% |
| ▪ Lack of advertising | 25% |

- Lack of labor supply 8%

Summary of Impacts of Infrastructure Improvements in the Corridor:

- Enhanced roads may make the tourist destinations in the region more attractive to out-of-area visitors.
- The difficulty in passing vehicles makes traveling along a two-lane corridor more hazardous than a four-lane highway.

5: TRANSPORTATION OPPORTUNITIES

Given the remoteness of the study area from major population centers within the United States, transportation becomes a critical factor for economic growth in the region. For industries that are located within the area, adequate transportation is necessary to receive inputs and also to transport finished products to market. For a business analyzing possible relocation to the area, a primary concern is the quality of the highway network. Interview responses suggest that many potential firms believe it is too risky to relocate to an area without close access to a four-lane highway. Inadequate roadway infrastructure further makes locating a business in the area particularly difficult because of the hardships to labor of commuting to work over long distances. And since there are no large concentrations of population within the study area, labor would necessarily need to be drawn over a large geographical area.

5.1 Existing Opportunities

The study corridor provides regional connectivity with North Dakota and Saskatchewan, and this is important when assessing economic opportunities in the area.

5.1.1 Local Level

On a local level, interview respondents suggest that highway enhancements would make businesses more likely to locate in the study area. This would increase traffic on the road, both by increasing trucking opportunities and by increasing the number of individuals driving through the study area to get to work. The work-related traffic is due to the study area's location in a remote rural area of Montana, which makes it necessary to draw labor from surrounding areas.

5.1.2 Regional Level

Trucks traveling across the US-Canada border in the study area have the option of crossing through the Port of Raymond, in northeastern Montana, or the Port of Portal, in northwestern North Dakota. There could be time incentives for trucks to cross at the Port of Raymond rather than at the Port of Portal due to higher potential processing delays at the Port of Portal. However, the distance is greater using Raymond for transport to Midwestern urban centers such as Chicago, Minneapolis, and Kansas City than using the Port of Portal. But if cross-border trucking increases, over time, delays at the Port of Portal could intensify and make truckers more likely to choose to cross at the Port of Raymond. Shortest distance is the primary factor in route selection, making the Port of Portal the dominant route choice to eastern destinations. Both ports are 24 hour ports of entry for both autos and trucks.¹⁸

In general, growth in US-Canadian border crossings has been around 3-10 percent per year. As long as the Canadian dollar remains strong against the American dollar, this growth is

¹⁸ Source: U.S. Customs and Border Protection

expected to continue. Thus, because of the increase in border-crossing demand, there is potential for trucks to utilize the study corridor in north-south freight movements. Another trend worth noting is the significant increase in oil and gas trucks crossing the border in the past 8 months, due in large part to the fact that diesel is currently much cheaper in the US than in Canada (by at least \$1/gallon).¹⁹

5.1.3 National Level

The absence of sufficient north-south rail lines means that railroads cannot adequately service rail freight movement in this direction. Historically, the rail line was laid primarily east to west, reflecting the majority of freight movement, a pattern which resulted in the current lack of north-south rail. With the emergence of the North American Free Trade Agreement (NAFTA), there has been growth in the demand for north-south freight movement. Informants suggest that rail will not be able to adequately serve the increased north-south freight movements, thus leading to increased truck traffic.

5.1.4 Regional and National Corridor Improvement Outlook

In an effort to examine the regional ramifications of an expansion of the TRED corridor, MDT conducted an informational survey of the transportation agencies of Saskatchewan, North Dakota, South Dakota, Idaho, Washington, Colorado, Texas, Nebraska, Minnesota, and Oklahoma. This survey's purpose was to determine the likelihood that sections of roadways that connect with the Montana TRED corridor, that exist within these other jurisdictions, would be expanded. The survey also asked whether the expansion of the Montana section of the TRED corridor would increase the likelihood of expansion of connecting sections of roadways within these other jurisdictions.

Of the nine states and one province surveyed, seven responded; North Dakota, South Dakota, Saskatchewan, Idaho, Minnesota, Nebraska, and Texas. Of those that responded, five; North Dakota, South Dakota, Idaho, Texas, and Nebraska indicated that over the next 20 years they have plans to widen sections of roadways that interconnect (either directly or indirectly) with the Montana TRED corridor.

On the question of whether the expansion of the Montana section of the TRED corridor would have any impact on the likelihood of expansion within the survey respondents' jurisdictions, only one, North Dakota, indicated it would have any significant impact on their expansion decisions. North Dakota responded that if the US 2 section of the Montana TRED corridor were widened, they believe there is a high probability that the North Dakota US 2 section from the Montana border to US 85 west of Williston would be expanded.

5.2 Impediments to Growth

One of the major impediments to growth in the transportation sector is a lack of labor supply. The current and predicted lack of drivers is a national problem, and within the study area it is

¹⁹ Meetings with US Customs and Border Protection

magnified by the remote location and lack of ability to find suitable labor. More than a third of transportation contacts surveyed reported that inadequate labor supply was an impediment to growth in the transportation sector.

Different standards for bridge length rules could also be an impediment to growth in cross-border trucking. The Truck Size and Weight (TS&W) regulations are rather complex and there is wide variation in limits, not only between the US and Canada, but also among states in the US and among provinces in Canada. The inconsistencies in truck regulations can add to the cost of cross-border truck movements both in terms of time and money. For example, many trucking firms have separate truck fleets for domestic shipments and for cross-border shipments. In addition, the difference between regulations within the US and within Canada necessitates additional truck inspections to ensure that provincial or state regulations are not being violated. The western Border States (except for Minnesota) are currently allowed 14-foot high vehicles, whereas most western Canadian provinces only allow 9-foot high vehicles.

Due to the variations of truck size and weight regulations, trucks in the western US and Canada crossing international and state borders are required to: stretch or contract trucks, raise, lower, or reposition axles; reposition fifth wheels; add or remove tires; and shift or modify loads. For example, Canada's steering axle limit (5,500 kg) is more restrictive than that in the western Border States (6,000 kg). This requires truckers to move their fifth wheel when traveling into Canada in order to meet regulations. Also, the split tandems used for semi trailers in the western Border States are not allowed in western Canada. All of these factors make the standardization of TS&W regulations attractive to truckers, as regulatory harmonization could remove a multitude of costs.

Among the major impediments to harmonizing regulations are differences in infrastructure design, construction, and fleet designs within states and provinces. Also, since the majority of freight shipments are short movements and most commonly within a state or province, these problems have not drawn enough attention to demand change. Weight regulations do not seem to present a large obstacle to truckers traveling between the western Border States, as the majority of trucking is done at weight levels significantly below Gross Vehicle Weight (GVW) limits.²⁰ Among the western Border States, Montana has the highest GVW limit, at 131,060 pounds for the majority of the state (between Shelby, MT and the Montana-Alberta border, the limit is raised to 137,500 pounds). Both North Dakota and Manitoba, Canada have more stringent GVW limits than Montana, at 105,500 pounds and 124,300 pounds, respectively.

Federal size and weight regulations are enforced on all routes included on the National Network. However, in Montana, only Interstate highways are on the National Network. By contrast, both North and South Dakota have some non-interstate routes that are parts of the National Network (including US 2 and US 85), ergo these routes are constrained by Federal

²⁰ See *Western U.S. – Canada Cross Border Case Study*, US Department of Transportation Comprehensive Truck Size and Weight Study, Report number 5, December 1995

Highway regulations. Thus, Montana has the flexibility to change truck standards on MT 16 and US 2, while North Dakota and South Dakota do not. This could potentially entice truckers from Canada to use MT 16 if Montana harmonized regulations on MT 16 down to Culbertson in accordance with Canadian configurations. However, Canadian regulations should also be changed to allow Montana sizes and weights.²¹

Another impediment to growth is related to the service hours at the Canadian ports of entry. Hours of operation for commercial traffic at the Port of Regway, opposite Raymond on the Canadian side, are limited to 8:00AM to 5:00PM, Monday through Friday (except holidays).²² This limited service could constrain future growth in north-bound freight movements on the border at Raymond.²³

Finally, recent high fuel prices have been hurting the transportation sector and are likely to be an impediment to growth in the future. Almost a third of survey respondents from the transportation sector felt that high fuel prices would hinder future industry growth. This response seems to be because fuel prices are a substantial contributor to overall shipping costs which means that overall shipping costs will also go up. Furthermore, as shipping costs go up it should be expected that either overall demand for shipping services declines, or at least the growth in demand for shipping services will grow at a slower pace than would have occurred had fuel prices not been high.

5.3 Opportunities Arising from Road Expansion

With roadway expansion, informants expect truck traffic to increase in the study area for several reasons. Traffic currently using nearby routes could be diverted from the less desirable, local ancillary roadways to an improved corridor. An improved roadway would minimize the “wear and tear” costs on vehicles passing through the corridor, lowering their costs and increasing profits for transportation companies. Also, improved conditions could entice truckers crossing the US-Canada border to ship through the Port of Raymond instead of the Port of Portal, especially if the time incentives to cross at the Port of Raymond increases.

Increased truck traffic in the region could, in turn, attract businesses to the area, such as additional truck stops, gas stations, and restaurants, amenities which could further increase truck traffic cumulatively. This would also lead to some population growth in the study area.

5.4 Summary of Findings

This section provides a summary of the major opportunities, impediments to growth, and the possibilities arising from roadway improvements within the transportation sector.

²¹ See *Estimating Traffic Changes and Pavement Impacts from Freight Truck Diversion Following Changes in Interstate Truck Weight Limits*, Humphreys and Fortowsky, January 2006, p. 75

²² Source: Canada Border Services Agency, <http://www.cbsa-asfc.gc.ca/contact/listing/offices/office616-e.html>.

²³ North Portal, opposite Portal, on the other hand, operates 24 hours a day, 7 days a week. See Working Paper 1 for more details.

Summary of Opportunities Identified in the Transportation Sector:

- Recent trends in cross border trucking (3%-10%)
- As congestion increases at the Port of Portal due to overall increased cross-border trucking, time incentives for trucks crossing at the Port of Raymond may increase truck movement along the corridor.

Summary of Impediments to Growth in the Transportation Sector (percentage of all respondents citing factor as an impediment):

- | | |
|--|-----|
| ▪ Lack of labor supply | 41% |
| ▪ Transportation infrastructure capacity or quality | 36% |
| ▪ High fuel prices | 32% |
| ▪ Standardization of regulatory codes with other states and Canada | 32% |

Summary of Impacts of Infrastructure Improvements in the Corridor:

- Possible population growth due to the study area corridor enhancement would lead to higher demand for shipping and transportation services in the region.
- An improved corridor in the region would result in less “wear and tear” on vehicles using the route; increasing the bottom-line profits of transportation firms.
- An improved corridor will allow businesses to enjoy a lower cost of shipping and to draw labor from a broader area; enhancing the overall economic viability of the region.
- An improved corridor would lead to higher traffic on the expanded highway partly because traffic would be diverted from other less desirable, secondary local roadways. A four-lane road would further provide for improved level of service as compared to the existing two-lane corridor.

6: RETAIL TRADE AND OTHER OPPORTUNITIES

In addition to the agriculture, energy, tourism, and transportation sectors, there are various other existing economic development plans in the region. Of particular importance is the retail trade sector. This sector accounts for much of the State's total employment and for the largest percentage of expenditures by visitors to the region.

6.1 Opportunities in the Retail Sector

In Montana, the study area, and nationally, retail trade is the largest sector in number of establishments. In terms of employment, this sector has dropped to the second largest (after agriculture) since 1990.

The retail trade industry is highly dependent on visitors to the area. In fact, retail sales are the prime economic impact of tourism in the state.²⁴ Retail trade expansion opportunities could increase as growth in tourism increases.

6.2 Other Opportunities

There are additional (non-retail) economic opportunities in the study area, including the possibility of building a FedEx hub in Plentywood and the development of the Municipal and Rural Water Pipeline project.

For shipments destined for Canada, it is currently quicker for people in Plentywood to cross the border to send their packages than to send them from the United States, where they will take approximately 2 weeks to travel the 200 miles to Regina. Informants report that a FedEx hub in Plentywood would reduce the time it takes to ship packages via FedEx across the Canadian border.

The Municipal and Rural Water Pipeline project (MR&I) is a project designed to provide a high quality and safe drinking water supply in the area. Using the existing Culbertson water treatment plant, the communities of Froid and Medicine Lake were connected to the regional system last year. In 2006, the community of Bainville and surrounding rural hookups will be added to the system. On the Fort Peck Reservation, the Tribe has completed construction of a water intake and transmission line to the location of the systems central water treatment facility. The Tribe is in the process of bidding the construction of the treatment plant at this time. At completion, the Fort Peck / Dry Prairie Regional Water System will provide service to communities and rural farmsteads north of the Missouri River, to the Canadian Boarder and from the North Dakota state line west to a boundary that lies just west of Glasgow. Ground water in this region is poor and heavily mineralized. In some areas, nitrates have been measured above levels that are safe for human consumption. In other areas, oil

²⁴ For example, in Richland County, 48 percent of the \$30 million spent by visitors in the region was spent in the retail trade sector (Regional Nonresident Spending in Montana, Institute for Recreation and Tourism Research, University of Montana, March 2000, Table 8.2, page 40.).

exploration activities have affected ground water quality. Through centralized treatment of Missouri River water, high-quality and safe drinking water will be supplied to the region. With the water comes increased possibility of growth, since good water is vital for development.

The widening of US 2 and MT 16 would allow for a variety of other economic developments in the study area. Some informants speculate that it would allow for the possibility of 2 or 3 additional duty-free providers on either side of the Port of Raymond. Also, they report, improvements to US 2 could lower freight rates since road quality and capacity directly affect the cost of transport over the corridor.

Enhancing the highway corridor could also improve the livability of the area by making it easier for people to travel to farther away cities with shopping and cultural amenities not existing within the local regions.

An improved corridor could provide various benefits for businesses, such as decreased shipping costs and increased availability of labor (since workers could commute from a broader region). These positive external economies could enhance the overall economic viability of the region.

According to economic development contacts surveyed in the area, business location prospects are reluctant to locate there in part because of distance from a four-lane highway. Businesses do not want to take the investment risk of locating in such a remote area.

APPENDIX A: OPPORTUNITY MATRIX

This appendix provides a summary table for the specific economic development and traffic growth opportunities identified in the course of the study. The following variables are populated for each opportunity listed in the table:

- Brief Opportunity Description;
- Start and/or Opening Year;
- Industry Impacted;
- Opportunity Type;
- Location and/or Geographic Coverage;
- Closest Road Segment in Corridor;
- Source and/or Reference; and
- Probability of Occurrence.

The full matrix (provided as an attachment to this working paper) also includes:

- Notes;
- Traffic impact estimates along MT 16 between Raymond and Plentywood, Plentywood and Antelope, Antelope and Medicine Lake, and Medicine Lake and Culbertson; and
- Traffic impact estimates along US 2 between Culbertson and Bainville, and between Bainville and the North Dakota Border.

Table A-1: Opportunity Matrix

Index	Brief Opportunity Description	Start / Opening Year	Industry Impacted ²⁵	Opportunity Type	Location / Geographic Coverage	Closest Road Segment in Corridor ²⁶	Notes	Sources
1	Pulse Crops - can be planted in fallow crop rotation; benefit of adding nitrogen to soil	Current	Agriculture	Socio-Economic	Study Area	Entire Corridor		Official with Montana Dept. of Agriculture
2	Popularity of organic products	Current	Agriculture	Socio-Economic	Study Area	Entire Corridor		
3	Increase in safflower production - trend toward use of healthier oils (safflower oil)	Unknown	Agriculture	Socio-Economic	Study Area	Entire Corridor		www.montola.com
4	Vegetable processing plant	Unknown	Agriculture	Socio-Economic	Unknown	Unknown		Meeting with - MDOC
5	Milk reduction facility	Unknown	Agriculture	Socio-Economic	Sidney	Along MT 16	There are enough onion growers in the area to make this possible.	Meeting with - Great Northern Development Corporation
6	Growth in safflower production for use in bio-diesel production	Current	Agriculture	Socio-Economic	Roosevelt County (Culbertson)	Entire Corridor	If one more dairy operation is put in place in Sidney, there will be enough critical mass to develop a milk reduction facility (value added production).	Bio-energy Source in Montana
7	Growth in truck traffic from Canada - imports (specifically Canola oil) will be needed to have adequate seed to crush for maintenance of bio-diesel refinery	Unknown	Agriculture	Socio-Economic	Roosevelt County (Culbertson)	Along MT 16		Meeting with the Fort Peck Tribal Council

²⁵ The choices of industries within the dropdown menu are: Agriculture, Energy, Tourism, Transportation, and Other.

²⁶ The segment choices are: Unknown, Entire Corridor, Along MT 16 and Along US 2.

Index	Brief Opportunity Description	Start / Opening Year	Industry Impacted ²⁵	Opportunity Type	Location / Geographic Coverage	Closest Road Segment in Corridor ²⁶	Notes	Sources
8	Growth in production of camelina seed for use in bio-diesel production	Unknown	Agriculture	Socio-Economic	Study Area	Entire Corridor		Meeting with the Fort Peck Tribal Council
9	Increase in cattle numbers as a result of increased feed grain from ethanol byproduct	Unknown	Agriculture	Socio-Economic	Study Area	Entire Corridor		
10	Irrigation projects on the Fort Peck reservation	Unknown	Agriculture	Socio-Economic	Fort Peck	Along MT 16		Meeting with the Fort Peck Tribal Council
11	Increased truck traffic resulting from further consolidation of loading facilities	Unknown	Agriculture	Socio-Economic	Study Area	Entire Corridor		Meeting with MDOC
12	Plans to build a 110-car loading facility in Culbertson	Unknown	Agriculture	Socio-Economic	Culbertson	Entire Corridor		Meeting with MDOC (Columbia Barge Company has bought the land) (or Continental Grain & Barge (CGB) Company)
13	Possibility of 110-car loading facility being built in Westby	Unknown	Agriculture	Socio-Economic	Westby	Along MT 16		
14	Conversion of 56-car grain elevator south of Plentywood into a feed lot	Unknown	Agriculture	Socio-Economic	Plentywood	Along MT 16		Meeting with the Fort Peck Tribal Council
15	Oil exploration	Current	Energy	Socio-Economic	Study Area	Entire Corridor		
16	Increased truck traffic resulting from need to truck oil	Current	Energy	Socio-Economic	Study Area	Entire Corridor		Montana Representative for Fish and Wildlife

Index	Brief Opportunity Description	Start / Opening Year	Industry Impacted ²⁵	Opportunity Type	Location / Geographic Coverage	Closest Road Segment in Corridor ²⁶	Notes	Sources
17	Talks of building oil refinery outside of Culbertson	Unknown	Energy	Socio-Economic	Culbertson	Entire Corridor		Meeting with the Fort Peck Tribal Council
18	Fischer-Trop plant (to turn coal into liquid fuel)	Unknown	Energy	Socio-Economic	Otter Creek	Along US 2		http://www.missoulanews.com/News/News.asp?no=5158 http://energyfuture.mt.gov/
19	Valley County Wind Energy Project	2008	Energy	Socio-Economic	Valley County	Along MT 16		http://energyfuture.mt.gov/
20	Nelson Creek Project (lignite-fired power plant)	2009	Energy	Socio-Economic	Circle	Unknown		http://energyfuture.mt.gov/
21	Montola/Sustainable Systems Project (bio-diesel refinery)	Current	Agriculture	Socio-Economic	Roosevelt County (Culbertson)	Entire Corridor		http://energyfuture.mt.gov/
22	Ethanol production plant	Unknown	Agriculture	Socio-Economic	Fort Peck	Unknown		Meeting with the Fort Peck Tribal Council
23	Yellowstone Ethanol LLC Power Plant	2006	Agriculture	Socio-Economic	Between Williston and Fairview	Along US 2		Press Release - 7/6/06 http://sidneyherald.com/articles/2006/07/09/news/new s03.txt
25	Job creation - need for workers to develop and maintain energy projects	Unknown	Other	Socio-Economic	Study Area	Entire Corridor	50 million gallon/year ethanol plant (up to 100 mil gal/yr in future); Cost = \$120 million; Building: 400 construction jobs (\$6 million in construction wages); Maintenance: 40 jobs	

Index	Brief Opportunity Description	Start / Opening Year	Industry Impacted ²⁵	Opportunity Type	Location / Geographic Coverage	Closest Road Segment in Corridor ²⁶	Notes	Sources
							(annual payroll in excess of \$1.5 million). Market for 100,000 to 200,000 acres of dry land and irrigated crops in the Mon-Dak region. 18-20 million bushels of corn and up to 2 million bushels of barley or wheat needed per year for the plant. Byproduct from plant will feed 250,000 feeder cattle	
26	Re-establish an old oil refinery	Unknown	Energy	Socio-Economic	Intersection of US2 and MT13 (west of Wolf Point)	Along US 2		Meeting with Roosevelt County Commission
27	Talks of developing a destination resort in the Fort Peck area	Unknown	Tourism	Socio-Economic	Fort Peck	Along US 2		Meeting with the Fort Peck Tribal Council
28	Completion of museums and dig sites along the Dinosaur Trail	Unknown	Tourism	Socio-Economic	Study Area	Entire Corridor		
29	Increased information kiosks and rest stops	Unknown	Tourism	Regulatory	Study Area	Entire Corridor		Meeting with a Representative of the Missouri River Country
30	Increased signage	Unknown	Tourism	Regulatory	Study Area	Entire Corridor		Montana Representative for Fish and Wildlife
31	Standardization of regulatory codes with other states and Canada	Unknown	Transportation	Regulatory	Study Area	Entire Corridor		Various Representatives of Transportation Firms in the Region
32	Time incentive for trucks to cross at Port of Raymond as opposed to Port of Portal	Unknown	Transportation	Regulatory	Port of Raymond	Along MT 16		Meeting with US Customs and Border Protection
33	Fed Ex hub	Unknown	Transportation	Socio-Economic	Plentywood	Along MT 16		Meeting with Sheridan County Commissioners

Index	Brief Opportunity Description	Start / Opening Year	Industry Impacted ²⁵	Opportunity Type	Location / Geographic Coverage	Closest Road Segment in Corridor ²⁶	Notes	Sources
34	Municipal and Rural Water Pipeline project	Unknown	Other	Socio-Economic	Glasgow to Plentywood	Along MT 16		Meeting with the Fort Peck Tribal Council
35	Harmonization of Operation Hours at Port	Unknown	All	Regulatory	MT/SK Border	Along MT 16		
36	Interchange of Freight Traffic between W. SK & Southern US	Unknown	Transportation	Socio-Economic	Unknown	Entire Corridor		

APPENDIX B: REFERENCES AND DATA SOURCES

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